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## Mozambique

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### Mozambique Fall Armyworm

**Report Categories:**

Pest/Disease Occurrences

**Approved By:**

Laura Geller, Senior Agricultural Attaché

**Prepared By:**

Almeida Zacarias, Agricultural Specialist

#### Report Highlights:

In early 2017, field samples were collected confirming the existence of fall armyworm (*Spodoptera frugiperda*) in Mozambique. This pest is now well established and distributed in all confirmed sites. The infestation and damage levels are high in the major areas sampled, affecting the normal growth of corn plants. It is evident that fall armyworm will have an impact on food security in Mozambique if controlling measures are not put in place promptly. The government of Mozambique is seeking \$2.6 million in funding to contain the fall armyworm and secure farmers' crop production.

## General Information:

### Summary

In early 2017, field samples collected confirmed the existence of fall armyworm (*Spodoptera frugiperda*) in Mozambique. This pest is now well established and distributed in all confirmed sites. The level of distribution suggests that the pest has been in place for several years with no significant impact. The infestation and damage levels are high in the major areas sampled, affecting normal growth of corn plants. It is evident that fall armyworm will have an impact on food security in Mozambique, if controlling measures are not put in place promptly.



### Fall Armyworm

The Food and Agriculture Organization of the United Nations (FAO) classifies fall armyworm as a serious threat to food security. Native to North and South America, fall armyworm was detected in Central and Western Africa in January 2016. The pest spreads quickly and by September 2017, 28 African countries had been infested.

According to the International Development Department (IDD) the occurrence of the fall armyworm, *Spodoptera frugiperda*, in Africa has potential to cause income losses estimated between 8.3 and 20.6 million tons per year, in absence of any control measures in only 12 corn-producing countries. This represents twenty one to fifty three percent of the annual mean corn production in a period of three years in these countries. The value of these losses is estimated between US\$2.48 to \$6.18 million.

Evidence from IDD indicates that the pest will expand up to its natural biological range in Africa, including north of Africa and Madagascar, as the environmental conditions for its propagation are similar to those of South America, where farmers have been dealing with the pest for decades.

## **Fall Armyworm in Mozambique**

In Mozambique, fall armyworm was first reported in 2017 in the Gaza, Zambézia, Niassa, Tete, Manica, and Maputo provinces. In all monitored areas, fall armyworm was confirmed with high density, and high-level infestations and damage. Based on the observed damage in the field, fall armyworm constitutes a serious threat to corn production in the country. Therefore, it is urgent to adopt and implement strategies to mitigate and minimize its impact on food security.

Because fall armyworm (*Spodoptera frugiperda*) mainly occurs in corn, which is produced by small-scale farmers in Mozambique who lack control measures, the accidental introduction of this pest in the country constitutes a serious threat to corn production and food security for rural populations where corn is a staple food. At the monitoring sites, it was observed that farmers are not using any kind of pest control measures to mitigate the impact of damage.

Since fall armyworm is a recent pest in Mozambique, there are no registered insecticides to specifically control armyworm, although chemicals used to control other insects (like *Spodoptera spp*) may be used. During the assessment, fall armyworm was the only pest registered on corn. Very little of other corn pests, like Chillo partellus (to date considered the main corn pest in Mozambique), were observed.

In November 2017, Crop Watch Africa visited Mozambique to assist with the use of a mobile application for use in field identification of fall armyworm and help setup pheromone traps. The initial training was to equip the Mozambican Government with the knowledge on how to use the Biosecurity Africa system and then for them to, in turn, train other government officials in the provinces.

## **Control Measures and Recommendations**

After Crop Watch Africa visit and training, some control measures and follow up were put in place. Mozambique government will place traps in the provinces and start collecting data, using the Biosecurity System, and users will create a group within the country to assist each other.

At this moment, the Mozambican authorities intend to adopt pest population control, whereby sexual traps (use of sexual pheromones) would be placed to attract male fall armyworm to reduce the rate of reproduction. This may help to reduce the pest population. Other control measure recommended are better agricultural practices, including; early planting, use of short cycle varieties, keeping fields clean from weed, and the destruction of post-harvest vegetative material. However, the main control measure is still the use of chemical insecticides, which incur higher production costs.

Crop Watch Africa recommendations:

- Support to Mozambique Government, not only on fall armyworm, but other invasive pests;
- Follow-up trainings and visits;
- Government needs to establish farmer awareness in the form of flyers and field

discussions with farmers;

- Grant mobile tablets for field officials to use in the field; and
- FAO Mozambique involvement

### **Follow-up Actions**

In order to prevent and mitigate the impact of fall armyworm on corn and other crops, the Mozambican technicians recommend the government put in place some emergency control measures:

1. Since there are no registered chemicals to control fall armyworm in Mozambique, the government needs to authorize quickly the registration and approval of recommended insecticides, in line with local pesticides decree.
2. Until then, technicians recommend the use of insecticides used to control same species pests, such as *Spodoptera exempta*, following manufacturer guidelines.
3. Conduct permanent monitoring and use of sexual pheromones to reduce pest population, while studying biology and ecology of the pest in Mozambique environments.
4. Sustainable integrated pest management that is accessible for low-income families to adopt.
5. Conduct agricultural campaigns, including production of printed and digital materials to show the pest's morphology, biology, and control measures through pamphlets, radio, television, and others.

The Mozambique SPS authorities are required to join the regional initiatives in the planning and development of SADC action plans to mitigate the impact of fall armyworm in the region.

### **Chemical Control Measures Tests**

While the country is still trying to find the most adequate measures to face the fall armyworm problem, a joint effort by the local University (Eduardo Mondlane) and a private company (Bayer) in collaboration with the government, is in place. A pest chemical control trial was established in Chókwè, Gaza province, to test a variety of insecticides to combat fall armyworm on corn. A field day in mid-March showed some incipient results on plots where insecticides were applied. However, the high cost of those chemicals, up to \$300/liter/hectare, will not be affordable by small-scale farmers and since corn is not a cash crop in Mozambique, the cost-benefits are not in favor of the majority of Mozambican subsistence farmers. Therefore, a combination of products is being tested to reduce the cost of insecticides. The validation of the results is pending replication of trials in other regions of the country where corn is the main crop, like Manica, Sofala and Zambézia provinces.

### **U.S. Government/Donor Response**

The U.S. government is responding to appeals to combat fall armyworm in Africa, including Mozambique. The U.S. government is collaborating with the Government of Brazil to host a FAW study tour for Ministers of Agriculture from selected African countries. The study tour was hosted by Embrapa, Brazil's premier agricultural research organization, from March 24 to 29 in Brasilia,

Brazil. The study tour demonstrated successful management practices and technologies to combat FAW. The one-week study tour also provided decision-makers with an understanding of the benefits and limitations of various pest management techniques and technologies, as well as the requirements needed to adapt these practices and technologies in their respective countries. USAID and Embrapa covered the cost of travel, lodging, and meals for all study tour participants.

The objectives of the study tour are to expose African decision-makers to proven and successful technology to combat the Fall Armyworm in a country with a similar agro-ecological zones, analyze the advantages and limitations of various technologies, learn how pest problems can be tackled through sustainable diversification, and understand the enabling environment required to develop and apply these technologies in their respective countries. The Mozambican Minister of Agriculture and Food Security, Higino Marrule will participate.